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AUTHOR Hunt, Geraldine
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ABSTRACT

A program was designed to improve the reading skills of the second grade at-risk students in a suburban K-6 elementary school located northwest of Chicago, Illinois. The second grade at-risk students could not read fluently at the conclusion of the academic school year, and consequently did not exhibit strong reading comprehension skills. A developmental delay of the children's oral language, a deficiency in language processing, the presence of learning disabilities, lack of phonemic awareness, lack of attention to print, and lack of reading practice were the major probable causes identified. Solution strategies chosen to meet the needs of this population included use of the whole language approach combined with the principles of the learning styles movement. The chosen interventions were designed to develop reading fluency, automatic word recognition, and comprehension skills. They were intended to help the at-risk students acquire a solid ground for the reading process through their own style of acquisition of knowledge to empower them to succeed in life-long learning. Results indicated that the seven students in the experimental group increased their oral fluency accuracy, increased their level of word recognition, and answered comprehension questions with accuracy to a greater degree than did the control group of six students, who were taught using a traditional approach to reading instruction. (Contains 45 references and 14 tables of data. Teacher interview questions, a letter to parents, homework instructions and checklists, a parent questionnaire, and a child questionnaire are attached.) (RS)

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THE IMPROVEMENT OF READING COMPREHENSION OF THE SECOND GRADE AT-RISK STUDENTS USING MULTISENSORY METHODS OF INSTRUCTION

by

*Geraldine Hunt

Submitted in partial fulfillment of the requirements for the degree of Master's of Arts in Teaching and Leadership

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Field-Based Master's Program

Action Research Final Report
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Submitted: April 27, 1994

*Teacher
Mark Twain Elementary
Wheeling, IL

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Terry Stirling, Ph.D., **IRI/Skylight Facilitator**

Dean, School of Education

Table of Contents

		Page
Abstract		iii
Chapter		
I	Problem Statement and Community Background	1
	Problem Statement	1
	Immediate Problem Setting	1
	The Surrounding Community	2
	Regional and National Context of Problem	4
II	Problem Evidence and Probable Cause	5
	Problem Background	5
	Problem Evidence	7
	Probable Causes of Problem	14
III	The Solution Strategy	19
	Review of the Literature	19
	Project Outcomes	33
	Proposed Solution Components	34
IV	Action Plan For Implementing The Solution Strategy	36
	Description of Problem Resolution Activities	36
	Methods of Assessment	41
V	Evaluation of Results and Process	42
	Implementation History	42

Presentation and Analysis of
Project Results..... 52
Reflections and Conclusions..... 61
VI Decisions On The Future..... 62
The Solution Strategy..... 62
Additional Applications..... 67
Dissemination of Data and
Recommendations..... 68
References Cited..... 70
Appendices .....
Appendix A Teacher Interview Questions..... 74
Appendix B Parent Letter..... 75
Homework Instructions..... 76
Homework Checklist..... 77
Appendix C Parent Questionnaire..... 78
Child Questionnaire..... 79

Abstract

AUTHOR: Geraldine Hunt
DATE: 4/27/94

ABSTRACT: This project describes a program to improve the reading skills of the second grade at-risk students in a suburban K-6 elementary school, located northwest of Chicago. The problem was detected because the second grade at-risk students could not read fluently at the conclusion of the academic school year, and consequently, did not exhibit strong reading comprehension skills.

It appeared that the traditional instructional methods were not meeting the needs of the targeted students. A developmental delay of the children's oral language, a deficiency in language processing, the presence of learning disabilities, the lack of phonemic awareness, the lack of attention to the print and lack of reading practice were the major probable causes identified.

The solution strategies chosen to meet the needs of this population include the use of the whole language approach combined with the principles of the learning styles movement. The chosen interventions were designed to develop reading fluency, automatic word recognition and comprehension skills. They were intended to help the second grade at-risk students have a solid ground for the reading process through their own style of acquisition of knowledge. This would empower them to have the tools to succeed in life-long learning.

The original problem of low comprehension scores was reduced as projected. The experimental group of second grade at-risk students increased their oral fluency accuracy, increased their level of word recognition and answered comprehension questions with accuracy to a greater degree than the control second grade at-risk students which used a traditional approach to reading instruction.

Chapter 1

STATEMENT OF PROBLEM AND DESCRIPTION OF CONTEXT

Problem Statement

The second grade at-risk students in a suburban community exhibit problems learning to read through traditional methods of reading instruction as measured by teacher observation, standardized and teacher made tests.

Description of Immediate Problem Setting

A suburban K-6 elementary school located northwest of Chicago, Illinois consists of 551 students. This elementary school is one of three bilingual centers and one of nine K-6 elementary buildings that feed into two junior high schools.

The student population is 51.5 percent white, 1.5 percent black, 40.3 percent Mexican-American, 6.4 percent Asian/Pacific Islander and 0.4 percent Native American. Twenty-seven point nine percent of the students are low income students with twenty-five percent of the students being limited English proficient. Limited English proficient students are those who have been tested and found eligible for Bilingual Education. Low income students are pupils from families receiving public aid or being supported in foster homes with public funds or eligible to receive free or reduced-price lunches. The attendance rate at this school is 94.9 percent. The student mobility rate is 14.4 percent.

This school has no chronic truants.

The staff of this school includes; one principal, twenty-three kindergarten through sixth grade teachers, four of those being bilingual teachers, two special education teachers including an assistant, one multi-media specialist and an assistant, one physical education teacher, one Chapter 1 reading specialist, one part-time computer lab teacher, one full-time social worker, one full-time speech therapist, one art instructor and one music teacher. Auxillary personnel include; one secretary, one full-time health aid, one part-time nurse and three custodians. There is a part-time psychologist and a part-time bilingual psychologist available upon request.

The Chapter I Reading specialist services 50 students and the special education resource persons service 35 children daily. These teachers are also involved in serving 47 children who do not meet state guide lines for Learning Disability or Behavior Disorder resources. They conduct a morning/afternoon support group. The speech therapist has a case load of 25 students.

Description of Surrounding Community

The elementary school is part of a consolidated school district located in a northwest suburb of Chicago. The administrative staff at the district level includes; one school superintendent, one assistant superintendent, seven

coordinators including one bilingual/ESL coordinator; one director of each of the following departments; staff development, ESL, finance, support services, assessment and testing, personnel and operations. The district has a student population of 6,146. The student population is derived from four surrounding communities. According to the 1990 census, the average family income is $52,505. The average per capita income is $20,469. The communities' population is 86.02 percent white, 1.2 percent black, 7.9 percent Mexican-American, 4.6 percent Asian and 0.15 percent other. As reflected by the 1990 census, 86.6 percent of the adults are high school graduates and 32.2 percent are college graduates.

The 1990 census of the school community work force reflected a total of 27,441 employed individuals of the total population of 45,150; 6.3 percent unemployed, 66.2 percent managerial-professional, 68.6 percent sales administration, 18.4 percent service-occupation, 2.2 percent farming-forestry, 19.8 percent production-repair and 24.8 percent operators-labor.

There was a 100 percent increase in single family housing from 1991 to 1992. In addition eight multi-family units were built during the same time period. The village clerk of the community stated that 75 single family units were built in 1992, with 120 units being built in 1993. No data was available for the multi-family units to date. Of

the available housing 63.2 percent is owner occupied and 32.9 percent is renter occupied. During the last five years the business community has been stable at 950 business enterprises.

Regional and National Context of the Problem

The traditional methods of teaching reading have left out the at-risk students. The problem is not only seen in the community that has been described, but is a problem that has been addressed in research. Levin and Hopfenberg (1991), Miller (1988), Carbo and Dunn and Dunn (1986) have addressed these issues in their research about at-risk students and the traditional methods of teaching reading.

According to Levin and Hopfenberg, (1991, p. 47) "The study showed that remediation, the main strategy for at-risk students actually slowed down their progress placing them farther and farther down the mainstream." In describing the educational causes of reading problems, Miller (1988, p. 12) states, "Another educationally related cause of reading problems may be called inappropriate reading instruction. This generally indicates beginning reading instruction that is not compatible with a child's unique needs or weaknesses." Researchers who have been involved in assisting at-risk children have found that: "Youngsters who cannot decode or read fluently often require repetition and varied approaches through many senses..." (Carbo, Dunn and Dunn, 1986, p. 241).

CHAPTER 2

PROBLEM EVIDENCE AND PROBABLE CAUSE

Problem Background

As stated in Chapter One, the general lack of reading comprehension has attracted national attention.

According to Becoming a Nation of Readers (1985), a Committee on Reading was appointed for basic guidance in the Right to Read Program. This program was to achieve "universal literacy and to make real the belief that reading is a right, not a privilege for all Americans-with special emphasis on children and adults whose reading is below par" (p. 123).

In 1983 a Commission was appointed, as stated in Becoming a Nation of Readers, "to bring to bear the great mass of research and theory on 'beginning reading and the comprehension of language'" (p. 123). The commission came to a consensus that "millions of children and adults have special problems in learning to read and tend to remain behind in reading and related academic subjects unless they are given extra help. This group includes children from low income families, ethnic minorities, non-English or recent speakers of English and those with specific reading and learning disabilities" (p. 123).

Locally this issue has been addressed in accordance with two Education Acts. Title 1 of the Elementary and Secondary Act of 1965 provided federal aid for educational programs for

low-income children. The name was changed to Chapter 1 in 1981, but had the same purpose (Shafritz and Koeppe, 1988).

In the local setting, Chapter 1 funds, since the beginning of the act, have been allocated based on the economics of the whole district. Chapter 1 funds are given to those schools based on the percentage of students receiving free and reduced lunches. Then there is a needs assessment done to determine in what area of academics this money should be allocated. In this district, because of the poor comprehension scores on standardized tests, the money has always been given for reading pull-out programs. Not all children in this reading program are low-income.

In 1975, the Education Act for All Handicapped Children was mandated (Soper, 1988). Every school in the district has learning disability resources available and related services for all handicapped children. In addition, the school in this action research project, mainstreams the physically impaired students. For children not progressing in reading, the district also offers a program called Literacy Laboratory. The students and teacher meet four times a week for a thirty minute session to read literature. This is a program offered in each school. Another support group in this setting is Lunchtime Learners. This is a readiness program placing emphasis on basic kindergarten and first grade skills.

Even with the available resources at this setting, the

population maintains low reading comprehension scores.

Problem Evidence

Both subjective and objective means were used to document the low reading comprehension scores of the second grade at-risk students. The population defined as the at-risk second graders in this research is: one child who is assigned to the physically impaired program and is learning disabled in language processing, one child assigned into the learning disability program for visual perceptual, auditory and language processing problems and eleven students assigned into the Chapter 1 Reading Program.

An interview with last year's first grade and special education teachers (Appendix A) indicated that these children were delayed in reading comprehension in spite of all the interventions tried, including Literacy Laboratory, Lunch Time Learners, Chapter 1 and L.D. services. The children had poor word recognition and had poor fluency because they just "couldn't read." Some of the teachers indicated some students had a lack of oral language development because of a different language spoken in the home, some had language processing problems, some had problems attending to the print, all had trouble with phonics, most appeared not to have any strong modality preference. The majority of these students loved to look at books, at least the pictures.

Additional data gathered through the Houghton Mifflin

Informal Reading Inventory supported these observations and perceptions.

The Houghton Mifflin Informal Reading Inventory was administered to the students in two second grade classes in September and October of 1993.

Table 1A
Isolated Word Recognition
Preintervention
Experimental Group

Student	Grade	Instructional Level
1	2	Kdg
2	2	Kdg
3	2	Pre-Kdg
4	2	Pre-Kdg
5	2	Pre-Kdg
6	2	Pre-Kdg
7	2	1st

Table 1B
Isolated Word Recognition
Preintervention
Control Group

Student	Grade	Instructional Level
1	2	Kdg
2	2	Kdg
3	2	1st
4	2	Kdg
5	2	Kdg
6	2	Kdg

The information illustrated in Table 1A and Table 1B presents the preintervention Isolated Word Recognition Scores for the Experimental Group A and the Control Group B. It should be noted that two second graders are at the first grade instructional level, seven students at the kindergarten instructional level and four are at pre-kindergarten instructional level.

These instructional levels were calculated in accordance with the grading standards of the Houghton Mifflin Informal Reading Inventory Test. The children had to score 90% on the word recognition list to be considered at that particular instructional level.

Table 2A
Oral Reading Accuracy Test
Fluency Test
Preintervention
Experimental Group

Student	Total Words Read Per Minute	Errors	Words Read Correctly	Percent
1	37	6	31	84%
2	37	2	35	95%
3	41	7	34	83%
4	37	13	24	65%
5	30	9	21	70%
6	17	12	5	29%
7	30	4	26	87%

Table 2B
Oral Reading Accuracy
Fluency Test
Preintervention
Control Group

Student	Total Words Read Per Minute	Errors	Words Read Correctly	Percent
1	47	1	46	98%
2	61	0	61	100%
3	49	3	46	94%
4	39	6	33	85%
5	44	1	43	98%
6	52	0	52	100%

An oral reading accuracy score of approximately 90% or above is one indication that the student can handle the material at that level of instruction according to a modified Houghton Mifflin Informal Reading Inventory accuracy test. The test was modified to reading a minute of a passage rather than the whole passage.

As shown on Table 2A and 2B seven students did not attain oral reading accuracy. This indicates that half of the students are not attaining accuracy in reading.

Table 3A
Preintervention
Comprehension
Experimental Group

Student	Comprehension Score
1	20%
2	20%
3	40%
4	50%
5	0%
6	0%
7	50%

Table 3B
Preintervention
Comprehension
Control Group

Student	Comprehension Score
1	30%
2	70%
3	80%
4	70%
5	70%
6	50%

Table 3A and 3B show comprehension at these children's instructionl level. According to the Houghton Mifflin Informal Reading Inventory, a comprehension score between 65% and 75% means the students are comprehending at their

instructional levels.

In the experimental group no students comprehended at their instructional level. It is to be noted that the Informal Inventory just tests at the Kindergarten level. So those students reading at pre-kindergarten level took the kindergarten instructional level test so results are not valid in this respect. Therefore, for those in the experimental group who were reading at the instructional level none met the comprehension criteria.

In the control group (no additional interventions implemented), three students met the 65% to 75% comprehension criteria according to the Houghton Mifflin Informal Reading Inventory.

Although three of the students in the control group attained 70% in comprehension, it must be noted that the reading level is two years behind. It is apparent that low comprehension scores are problematic in this setting. Although the first grade teachers did not see any strong preference for modalities, the researcher wanted to test the children to acquire another avenue for intervention.

The Reading Styles Inventory (Carbo, 1988) was administered to see if these children had a preferred learning modality that might help them learn to read more easily.

Table 4A
Reading Styles
At-Risk Second Graders*
Experimental Group

Student	Visual	Auditory	Tactile	Kinesthetic
1	Excel	Fair	Moderate	Moderate
2	Good	Fair	Moderate	Moderate
3	Poor	Fair	Moderate	Strong
4	Good	Fair	Moderate	Strong
5	Good	Excel	Moderate	Moderate
6	Good	Good	Strong	Strong
7	Good	Excel	Strong	Strong

Table 4B
Reading Styles
At-Risk Second Graders
Control Group*

Student	Visual	Auditory	Tactile	Kinesthetic
1	Excel	Excel	Strong	Strong
2	Good	Fair	Strong	Strong
3	Fair	Fair	Strong	Moderate
4	Fair	Fair	Strong	Moderate
5	Excel	Good	Moderate	Moderate
6	Good	Fair	Strong	Strong

*Measured by the Reading Style Inventory
Primary Version (Carbo, 1988)

The results showed that all the children showed strong or moderately strong preferences for the tactile/kinesthetic modality. One child was poor, two children fair, seven children good, and three children were excellent in visual perceptual strengths and preferences. The auditory strength and preference showed that three children excellent, two children good, eight children fair in using their modality.

A summary of the data from each of these tests reported, indicated a need for further interventions with the at-risk students. This data supported the perceptions of the first grade teachers as well as the current second grade teachers.

Probable Causes of Problem

The data collected from the site suggests that the at-risk students have a variety of situtions that are probable causes for their poor reading: poor oral language development, learning disabilities, language processing problems, poor phonemic awareness, problems attending to the print, and lack of help at home.

Informal conversations with the parents during Open House in September, 1993, and anecdotal records indicate that many of these students have parents who speak another language in the home. Many of these parents have "broken English." Therefore it is suspected that the children come to school with underdeveloped oral language. School records show that learning disabilities and language processing

problems are also causes in some of the students.

As stated in the problem evidence, in an interview with the former first-grade teachers, none of the students had phonemic awareness. It is suspected, therefore, that lack of phonemic awareness might be a causation of the problem of these at-risk students.

Through teacher observation, it is apparent that the experimental group either do not look at the text or cannot attend to the text for a period of time. This suggests attending to the print as one of the probable causes at this site.

Finally, it was stated by the Reading/Language Arts Coordinator of the district, that because of the economic pressures of some of the parents there is no time to talk and share with their children. The parents cannot give them the needed help in reading.

A summary of the probable cause data collected from the site permitted these conclusions: Oral language is not developed, these children lack phonemic awareness, do not attend to the print, and come from homes where there is little time for needed help with reading.

Probable cause data from the literature was categorized into deficiences related to reading comprehension goals. These include: oral language development, exposure to print, attention to print, phonemic awareness, individual learning styles instruction and reading practice.

Oral language appeared to be a prerequisite to reading and writing according to Snow and Perlman (1985) as cited by Strickland and Morrow (1991). Anderson, Hiebert, Scott, and Wilkinson (1984) stated that for systematic reading instruction to occur, ample experience in oral language is required. They acknowledged that "Reading instruction builds especially on oral language. If this foundation is weak, progress in reading will be slow and uncertain" (p. 30).

Goodman (1986) and Mason (1980) viewed exposure to print as an important precurser to skilled reading. Davey and Menke (1991) agreed that print knowledge is critical in the development of word recognition for reading comprehension to occur successfully.

To achieve reading comprehension, Clay (1979) suggested that children must learn to attend to the print. The eye does not photograph the detail of print and does not transfer it to the brain.

Eldredge (1990) found that poor readers cannot connect words and sentences in a meaningful way. One of the main reasons for this is that students tend to focus on small units of the word instead of larger units. Since fluent readers perceive phrases when reading and decode automatically, comprehension is proficient. Clay (1979) believes that students have a greater difficulty breaking up a word into sequence of sounds and hearing the sequence of

sounds.

In 1988, Miller stated that reading problems may be caused by inappropriate reading instruction that does not take students' individual needs and weaknesses into account during instuctional time. Carbo (1987) feels that too many students are victims of the unspoken assumption that there is one right way to teach reading to all children.

> It comes as no surprise that many poor readers are predominantly global, tactile, and kinesthetic learners - for that is precisely the reading style that seems to be accommodated least in U.S. classrooms. Unfortunately, many of today's poor readers are dropouts of reading programs that demand strongly analytic/auditory reading styles (Carbo, 1987, p.72).

In the opinion of Anderson, Hiebert, Scott, and Wilkinson (1984) students who read a lot showed larger gains in reading on achievement tests. In a study by Juel (1988) as cited by Kameenui (1993) it was noted that students who did not develop good word recognition skills in first grade read less than good readers both in and out of school.

Causes for the problem gathered from the site and the literature that appeared to cause low comprehension scores are:

1. lack of fluency
2. lack of automatic word recognition
3. lack of oral language development
4. lack of exposure to print
5. lack of attention to the print
6. lack of phonemic awareness
7. lack of instruction that accommodates individual learning styles
8. lack of reading practice
9. lack of available help from parents

Chapter 3

THE SOLUTION STRATEGY

Review of the Literature

"The goal of skilled reading is effective, efficient construction of meaning or comprehension" (Davey and Menke, 1989, p. 49).

What were the probable causes of low comprehension at the end of the first grade in a K-6 elementary school in a suburban community northwest of Chicago?

Upon examination, limited word recognition and fluency appeared to be the prominent probable causes in this setting. The underlying causes appeared to be limited oral language development, lack of attention to the print, lack of phonemic awareness, limited practice of reading at home, learning disabilities and language processing problems.

Word recognition is the visual perception that occurs when the spelling pattern, the speech and the meaning are connected automatically (Adams, 1991).

"Fluency is an indicator that comprehension is occurring" (Schreiber, 1980) as cited by Sippola, (p. 17).

The literature indicated that oral language development, exposure and attention to print, phonemic awareness, learning styles instruction and repeated practice, should be addressed as a component of the solution strategy for the low comprehension student.

To address the improvement of the acquisition of reading comprehension, the following questions were addressed.

Have the students developed oral language skills adequately to make comprehension of the text possible? Have the students been exposed to print enough to acquire the meaning of the text? Have the students attended to the print to use the visual cues appropriately for comprehension? Have the students had difficulty in hearing and sequencing the sounds with the visual cues in order to read words for comprehension? Have the teachers exposed the students to a variety of learning style approaches to meet their individual differences to acquire reading comprehension? Have the students practiced reading sufficiently to improve comprehension of the text?

These questions indicate that the literature search should include: oral language development, exposure to print, attention to print, phonemic awareness, learning styles and repeated practice.

Oral language development appeared to be a significant component of reading acquisition. The data collected from the literature suggested that oral language acts as the catalyst for reading to occur easily for the students. Homes that communicate easily not only in spoken language but through reading and writing to the children, accelerate the reading process. The child develops the knowledge that print is just a written manifestation of oral language. Therefore,

as cited in the literature, oral language development is truly fundamental to the reading process (Snow and Perlman, 1985; Teale, 1987; and Glazer, 1989, as cited in Strickland and Morrow, 1989).

In addition to these knowledgable others, psycholinguistics as cited in Tadlock (1986) believe that students come to school with the language development to communicate their knowledge of the world. It is believed that this verbal communication makes reading possible. There are three systems that a student must access to read. They are the semantic, syntactic and graphophonic systems.

Oral language is the way the good readers experience the semantic system in the early stages and later they connect it with the print to have the knowledge of grammar in their reading. Because of the syntactic system, the verbal communication relates to the aspects of words, sentences and paragraphs for the transfer of meaning to the print. Because of the graphophonic system, the student can relate the letters to the sounds although, truly fluent readers access this system only to confirm the predictions which are made by the other two systems. Through multi-exposure to oral language experiences, the students can access these three systems as part of the reading process (Tadlock, 1986).

Experts in the field emphasized that good oral language development is a pre-requisite for reading acquisition. According to Routman (1991) and Durkin (1986) there are a

variety of techniques to enrich students' oral language development. These techniques include learning nursery rhymes, poetry, and songs. Through these techniques, students will become accustomed to hearing the text and transfer it to the reading text. With some children, just repetition will be enough to learn to read. Others need to be shown that words begin with the same sound and exactly what a word is. Listening to the language first works not only for beginning readers but with older readers who have had difficulty with the reading process. Therefore, Routman,(1991) Durkin, et al (1986) agree that oral language development impacts on the acquisition of reading.

Exposure to Print

As stated in research done by Adams,(1990) Clay,(1979) and Davey and Menke,(1991) exposure to print is fundamental in the development of reading. Even before formal instruction begins children need to understand that print communicates information not only about learning, but entertaining and as a means of recording. They need to know the value of print in their lives through reading. It is important for them to know how print works. Print is composed of meaningful units of spoken words, and words are units of letters. Research indicates that this is one of the most important aspects of fluent reading. Adams (1990) stated that students should be able to recognize letters,

spelling patterns, and whole words visually and automatically in order to acheive comprehension.

When children entering first grade make the following observations that print is everywhere you go, that adults use print in different ways, that print can be produced by anyone, and they can make the association that print symbolizes oral language and holds information that adults read, then they have a solid ground for understanding the nature and uses of print. When children can do the above, then they have the most important tools to best learn reading and writing. The children who come to school without these tools can be helped by:

1. Showing them, through reading big books, that a string of letters are words and that there is a blank space to indicte that each string has its own meaning.
2. Showing them the correspondence between oral language and written language by observing the long strings of letters and short strings of letters (the time of reading corresponds to the length of the string of letters).
3. Asking them to compare short and long words in context and deciding which one corresponds with the pronounced word.
4. Exposing them to Dr. Seuss books.
5. Cutting and pasting words that start with the same sound.
6. Using the dictionary to look up words.
7. Having centers with printed words of the story and having the story taped so they can identify the words they hear

while reading (Adams, 1990).

Clay (1979) agrees with Adams, (1990) Davey and Menke (1991) that exposure to print is fundamental in the development of reading.

Attending to Print

According to Clay (1979) students are not actively engaged in the print and need to get involved in attending to the print. There are a variety of methods to assist the students to focus on the print. One method, Clay suggests, is a visual attending device which is known as a masking card that has windows to expose part of the text to be attended to. Cardinal, Griffin and Christenson (1993) stated that tinted overlays also appear to assist the reader in attending to the print. Comprehension has been shown to improve through this technique.

Assisted reading appeared to be an important method to help the child with difficulties attending to the print. In the assisted method developed by Hoskisson, and described by Eldredge, (1988) a parent moves his/her finger slowly under the line of the text so that the child can attend to the print. After this process had been repeated, the child was eventually able to read the book. A similar method, as cited by Eldredge, (1988) called The Neurological Impress Method, was developed by Heckelman (1969) to help the student with disabilities. Again the words were pointed to as the

students and the adult or teacher read the text. The voice of the adult or teacher was directed to the student's ears. Sometimes the adult or teacher read louder and faster than the students and at other times just the opposite.

The research to date suggests the Attention Deficit Disorder students have a primary handicap of not paying attention in school. There is an indication that many of these children have problems with visual memory; this will give them great difficulty learning to read because what is read cannot be remembered (Friedman and Doyle, 1987).

Research shows that attention deficit students attend better over a longer period of time in front of the television. Eddowes and Alridge (1991) suggest that this may be an important setting where the attention deficit child can learn.

Phonemic Awareness

As cited by Yopp, (1992), Perferpti, Bech, Bell, and Carter (1974) believed that phonemic awareness is both a prerequisite and causation of reading acquisition. Young learners must have a certain degree of phonemic awareness. Juel, (1986) Lomax and McGee (1987) believed that phonemic awareness is a strong predictor of reading comprehension acquisition.

In the opinion of Clay, (1979) children learn to read in the same manner that they learn to talk. The child must

learn the spoken word and break it into phonemic pieces. To assist the learner in this task, counters could be used to represent every sound, not every letter, of the word. The child pushes counters into boxes to represent each sound of the word.

According to Clay, (1979) sound sequence and letter sequence analysis are two complex sets of operations that need to be coordinated to become fluent readers. When the students are unable to coordinate these two on their own, the teacher can assist them with these strategies.

Sounds to Letters: Ask the child what letters would be expected at the beginning, middle or end. Let the child reconstruct the word with magnetic letters; look at the word, run fingers across the word, close eyes and write it several times without looking; confirm the prediction of what the word would say in the text.

Letters to Sound: Ask the child to create a story and put the story in sentence strips. Because the sounds of the writing are instilled in the head of the child, the sounds will be a guide for reading. When a problem appears, help the child predict what the word will be by giving the first sound. Then give the child an opportunity to sound each letter and write it on the blackboard until the word would fit the context. Clay et al (1979) agree to the importance of phonemic awareness in the acquisition of reading.

LEARNING STYLES

Approaching reading with attention to different learning styles is not an innovative idea. Since the 1920's (Grossman, 1981 as cited by Thrope and Borden 1985), reading instruction has used multisensory techniques. Orton (1937) and Gillingham (1965) stress phonics through the multisensory approach. Fernald (1943) used this approach but emphasized syllables and word parts.

> Children, like all living things - trees, leaves, plants, animals, adults - have individual differences. These individual differences need to be recognized by varying teaching procedures, learning experiences, uses of time and space as well as by careful selection and use of materials suitable for meeting the needs of the individual child (S.D. State Div. of Ed., 1986, p.5).

There are two perspectives concerning learning styles in children, one being modality preference and the other one being hemisphericity.

Learners process information in their own way. Each learner has a dominant modality that is chosen to process new information. Although the multisensory technique has been used successfully, some researchers agree that matching individual modalities will bring success in reading. The three sensory chanels are: visual, auditory, and kinesthetic/tactile. The visual learner relies on visual clues and in inward visualization; the auditory learner does not need visual stimuli, but learns from hearing; the kinesthetic/tactile learner needs to manipulate, touch and write to learn (L.S. Dept. of Ed., 1987).

According to Carbo, (1993) modality preference is developmental. The primary years are more dominately kinesthetic/tactile, more visual at third grade, and auditory developed by sixth grade.

The other perspective that deals with learning style is right brain/left brain dominance. The right brain processes information from whole to part, and the left brain processes information from part to whole. Both hemispheres should be accessed for reading instruction, although traditionally reading skills development has emphasized the left-brain hemisphere in children (L.S. Dept. of Ed., 1987).

Tadlock (1986), Miller, (1988), Aaron and Whitefield (1990) agree that the teachers should have knowledge of a variety of learning modalities and adapt the environment to suit the needs of the learner's cognitive style. The learner should not be required to adapt to the teacher's instructional approach.

From the literature on learning styles as it relates to the ability to read, Carbo (1990) and Miller (1988) agree that the beginning readers can make optimal gains through tactile/kinesthetic, visual and auditory approach. Activities such as games, typewriters, computers, plays, pantomiming, drawing pictures, writing about them, and puppets all appeal to these learning styles.

Another facet of learning styles is the global (field dependent) and the analytic (field independent) approach. As

cited by Davey and Menke, (1991) in the study by Globenson, Weinsten and Sharbuny, (1985), field dependent (global) and field independent (analytic) learners performed similarly in the reading process when appropriate strategies for reading instruction matched their cognitive style. Global learners (field dependent) are whole-part learners whereas analytic learners (field independent) are part to whole learners. This is important to consider when designing reading instruction. Carbo (1990) emphasized that reading programs that work better for poor readers are the ones that implement global techniques such as humor, choral reading of stories, predictable patterned books, and listening to taped stories. All have helped the reader to improve reading and self-confidence. It is important to delete skill work for global learners and include high interest, well-written reading materials. Carbo (1987), suggests that reading lessons should begin with global strategies for the poor readers in the primary grades.

Dunn and Frazier (1990) cited studies by Adams, (1983) Cafferty, (1980) and Mehdikani, (1980) that suggest academic achievement is evident in reading acquisition when the students learning style and the teacher's instructional style are well-matched.

Practice

Many professionals, such as Johns, (1991); Routman, (1991); Adams, (1990); Carbo, (1987); and Clay, (1979); believe that one successful strategy for reading comprehension is repeated readings. Children develop word recognition, fluency, more accurate and faster reading, and more sophisticated textual paraphrasing through reading practice. Carbo (1987) devised a repeated reading method that allows students to read books above their grade level with fluency and accuracy. The technique she used was to record books at a slower pace than the usual so that the students could synchronize the printed words. This method required the student to listen to the recorded passage two or three times. Then they would read it aloud to a peer or a teacher. This method agreed with the findings of Eldredge and Quinn (1988). Children who are assisted made a substantial gain in reading stories.

Just reading material of their own choosing can empower students to be successful. A special daily reading period, just for reading these chosen materials, should be established in the classroom (Johns, 1991).

In a study by Anderson, Wilson, and Fielding (1988) there was a correlation between minutes per day of independent reading practice and the percentile rank on a reading standardized test; students who read independently 0 minutes per day, scored in the second percentile; those who

read independently 9.2 minutes a day were in the 50th percentile and finally students who read 67.3 minutes scored in the 98th percentile. Therefore, Johns (1991); Anderson, Wilson and Fielding, (1988); agree that reading practice is fundamental in the process of reading.

An additional solution that was addressed in the literature to assist students with the reading process was cross-age peer tutoring. An older student can help younger students with reading activities. These activities could also include word recognition activities or independent seat work. These older students must be trained and supervised for the cross-age tutoring to be successful. (Friedel and Boers, 1989).

It was suggested by Neuman and Koskinen (1992) that captioned television benefits bilingual students in reading development and language acquisition. Significant differences in word recognition and oral reading skills also were documented in the learning disabled children who read the print captions on T.V. with those L.D. children that did not. It appeared that the multisensory component of captioned television allows students to view context in interesting and stimulating ways. In a study by Chomsky and Halliday, (1975), as cited by Neuman and Koskinen, (1992) language is also acquired through a subconscious process. In other words, language acquisition occurs without any conscious effort.

A summary of the literature that addressed the questions for the acquisiton of reading comprehension suggested the following strategies:

1. Shared reading in a variety of forms as nursery rhymes, poems and songs should be engaged in, on a daily basis.
2. Provide a print-rich environment through a variety of books, charts, periodicals, and calendar on a daily basis. Have centers with printed words of the story and have the story taped.
3. Use masking card to expose segments of text or group of units to be attended to daily.
4. Use tinted overlays to assist in reducing the contrast of printed material daily.
5. Track the text while listening to another person read.
6. Place counters in a square for every sound students hear, not letter. Use magnetic letters for sound cueing; use sentence strips for prediction of word in context.
7. Provide a variety of activities to accommodate the different learning styles in the teacher's lesson plans.
8. Use repeated reading and recorded books on a daily basis.
9. Provide a cross-age peer tutoring program.

10. Use captioned television to provide the essential environment ingredients for language acquisition and reading development in the minority students and learning disabled students.

Project Outcomes

The terminal objective of this intervention was related to the low comprehension scores presented in Chapter 2 from the Houghton Mifflin Informal Reading Inventory. The scores indicated that thirteen of the second grade students were at-risk for reading failure. Probable cause data from Chapter 2 and solution strategies from this section implied a need to increase oral fluency rates, and increase the students level of word recognition to improve compehension in reading.

> As a result of using a whole language, phonemic awareness, repeated practice, learning styles approach to reading instruction during the period, October 1993 to the end of January, 1994, the second grade at-risk students will increase oral fluency, increase their level of word recognition and answer comprehension questions with accuracy as measured by the Houghton Mifflin Informal Reading Inventory and teacher observation, to a greater degree than the control second grade which uses a traditonal approach to reading.

In order for the terminal objective to be accomplished, the following process objectives are proposed to assist in problem resolution.

> 1. As a result of using teacher-made highlighted recorded book videos, during the period of October, 1993 and January, 1994, the at-risk second graders will increase word recognition, fluency and comprehension as measured by teacher observation.

2. As a result of repeated readings of a student-chosen portion of the video, the student will increase automatic word recognition, fluency and comprehension as measured by teacher observation.

3. As a result of using the language master for review of troubled areas in the story, the second grade at-risk students will improve their word recognition and fluency as measured by teacher observation.

4. As a result of using the Baretta-Lorton Reading Approach, the second grade at-risk students will become aware of the sequence of sounds in spelling which will lead to improved word recognition as evidenced by teacher observation of the students written expressive language.

5. As a result of using Dolch Sight Word Activities packets, the second grade at-risk students will improve their automatic word recognition and fluency as measured by teacher observation and standardized word recognition tests.

6. As a result of a twenty minute silent reading practice, daily, the second grade at-risk students will improve word recognition, fluency, and reading comprehension as measured by teacher observation.

Proposed Solution Components

The major strategies that will be used to improve comprehension through automatic word recognition and fluency are as follows: development of oral language skills through the use of good children's literature and predictable language books; exposure and attention to the print by use of a video which has been highlighted to address this probable cause, phonemic awareness addressed by a hands-on-reading approach, instructional materials to match the learning styles of the students and daily reading practice both for

enjoyment and for repeated readings.

These strategies are related to the terminal objective because they attempted to make a change in automatic word recognition and fluency rates in order to increase reading comprehension.

Chapter 4

ACTION PLAN FOR IMPLEMENTING THE SOLUTION STRATEGY

Description of Problem Resolution Activities

The action plan was designed to increase phonemic awareness, reading fluency and automatic word recognition to improve comprehension through the use of a learning styles approach. This approach addresses the needs of the second grade at-risk students who have experienced great difficulty learning to read in the traditional way. It was difficult for them to automatically recognize words. This interferred with fluency and comprehension, and led to failure in reading.

The action plan will be implemented in October, 1993 after the preintervention assessment instruments are administered. These include the Houghton Mifflin Informal Reading Inventory, The Reading Styles Inventory (Primary Version) (Marie Carbo, 1988) and a modified one-minute fluency test, using the Houghton Mifflin Informal Reading Inventory passage.

Through the implementation of the action plan, improvement in the problem areas are anticipated. The implementation is presented below in narrative form.

During the summer and fall of 1993, the second grade teacher will video tape the Houghton-Mifflin second grade literature-based reading series in her home. She will record

the series, highlighting words or phrases of the sentence. Overlays will be placed over appropriate words and phrases. The taping will be done with the directions for recording text according to Marie Carbo's book, How to Record Books for Maximum Reading Gains. This product will be used for the at-risk second graders to read, listen and point to while the other second graders read to themselves or with a buddy. In this way they will be able to comprehend and participate in the post reading activities with confidence. This method accesses the learning style of the visual, auditory, tactile/kinesthetic and global learner.

After the initial reading of the text, the second grade at-risk students will have a choice of the reading practice material chosen from the videoed story. The students will practice the section of the text repeatedly for five minutes each day to increase fluency and word recognition. This will take place in the classroom or student's home.

The second grade teacher/researcher will contact parents of the at-risk students for a convenient conference time. The purpose of this conference is to discuss the results of the inventory and fluency testing. Then the homework procedure of repeated readings will be explained. The parents will help facilitate the practice which should lead to fluency and word recognition.

A cross-age tutor will be provided to facilitate repeated readings daily in the classroom. This tutor will be

available if the home is unable to assist in the repeated practice. This will give a student a chance to increase word recognition and fluency in reading.

Time will be provided for these second-graders to read to a class of bi-lingual first graders. This will increase practice in reading and build self-confidence. The second grade teacher will contact a first grade bi-lingual teacher to participate in a reciprocal read-a-loud program. The second graders will read the section of the text on video tape and then listen to the first graders reading their text on video tape. A convenient time will be chosen by both teachers. The reciprocal read-a-loud will alternate between the first grade and second grade classrooms. The children will go to either room with their tape, place it in the recorder and read. This procedure will again bring repeated practice through the variety of learning modes increasing fluency and word recognition.

The second grade teacher will provide time for the students to audio tape their practice section of the previous night or day. Audio taping will be done outside in the hall to provide a quiet atmosphere during silent reading time of the other children. The purpose is for the teacher to evaluate the child's fluency and for the child to self-evaluate. This indicates whether more practice time is necessary to recognize some words and phrases with automaticity.

Additional time during the lunch recess time of five minutes will be given for those students having continuing problems with some word recognition and phrases. This procedure will occur using the Language Master which is a machine that accesses the learning style of the visual, auditory and kinesthetic student.

To increase phonemic awareness, the adaptation of the hands-on reading approach of Baretta-Lorton will be implemented. The second grade teacher will adapt materials of the Baretta-Lorton Reading approach. The book, Dekodiphukan, will be video-taped, by the teacher/researcher, for the whole second grade class. The sound of the letters are told in context. During the month of September the forty-four phonemes will be introduced in the classroom. The teacher/researcher and children will view the video tape in small segments daily, learning four new sounds a day. The students will take the correlated picture cards and make words for them. The children will develop phonemic awareness which will lead to improved decoding and consequently automatic word recognition and fluency in reading.

The Baretta-Lorton Reading program will also be adapted to the Houghton-Mifflin Spelling and Vocabulary Program to increase phonemic awareness. The second grade teacher will design materials adapting the program on spelling. These materials will include individualized sets of phonemic picture cards. On the back of each card will be the common

letter or letters that represent the sound. The students will listen to the spelling word and find matching pictures for the sounds. Next they will write the predicted spelling. The correct spelling will be given and the students will correct it by writing it. This structured technique will be done during a half hour spelling time once a week. The cards will be available for the students when they want to use them for writing assignments. The at-risk second graders will have a set of cards for home practice use. The students will also have alternating center or free time to use paper cards to write code messages with their friends. The purpose of using this approach is to improve phonemic awareness which may improve sequencing in decoding which will lead to word recognition. This technique is using visual, auditory and kinesthetic modalities with emphasis on analytic skills which may help with attending to the print.

Those at-risk second graders that are non-readers as assessed on the Houghton Mifflin Informal Inventory will get additional practice in reading predictable books. The teacher will read one line and they will repeat until they reach fluency. This will take place during silent reading time. This technique will enhance oral language development and attention to the print which may not have developed earlier.

A daily twenty minute silent reading time will be scheduled for reading practice. It will take place in the

second grade classroom. The second grade teacher will listen to and observe the practice daily.

Methods of Assessment

Post intervention tests will be administered to measure the increase of fluency, automatic word recognition and comprehension skills. The Houghton Mifflin Informal Reading Inventory will again be administered as it was in the pre-intervention. These post intervention tests will be administered at the end of January. The purpose of the assessment will be to ascertain if the instructional levels of the experimental group advanced more than the control group. The Chapter 1 and the L.D. teacher observations will be included along with the observations of the second grade teacher. A questionnaire will be sent to the parents and given to the students at the end of January, 1994, to obtain feedback on the methods being used and which methods they feel helped their child the most.

Chapter 5

EVALUATION OF RESULTS AND PROCESS

Implementation History

The terminal objective of the intervention plan addressed the low comprehension scores of the reading at-risk second graders. Test scores in the fall of 1993 and interviews with last year's teachers indicated that the reading comprehension of these students was below their second grade placement. Therefore the terminal objective stated:

> As a result of using a whole language, phonemic awareness, repeated practice, learning styles approach to reading instruction during the period, October, 1993 to the end of January, 1994, the second grade at-risk students will increase oral fluency, increase their level of word recognition and answer comprehension questions with accuracy as measured by the Houghton Mifflin Informal Reading Inventory and teacher observation, to a greater degree than the control second grade which uses a traditional approach to reading.

The acquisition and development of non-traditional approaches to reading began after becoming aware of the number of low reading and comprehension levels of the outgoing first graders. The awareness came after conversing with the first grade teachers. The need for alternative reading approaches was apparent after discussing the traditional methods and interventions that had been attempted with these students. Testing of all of the students in two

second grade classrooms took place during September and October, 1993. The first test administered was the Word Recognition Test of the Houghton Mifflin Informal Reading Inventory. This test required ninety per cent accuracy for the student to be reading at that level. For example, if the student scored ninety per cent correct on the Level One Word Recognition test the tester would consider the student reading at first grade level. Then the tester would give the Level One Fluency and Comprehension Test. These test scores were used to choose the experimental group and the control group of second graders. The teacher of the control group was cooperative and said this group of students would go to Chapter 1 reading support and would be included in her regular program without extra interventions.

The experimental group would be receiving Chapter 1 support services and one student would be receiving L.D. support services fifty per cent of the day. One student, who is physically impaired would have a teacher's aide during reading and post reading activities and would receive the project intervention.

After choosing the experimental group, a parent-teacher conference time was initiated with each of these student's parents. Two parents were not able to attend. The teacher conferenced with an older sister of the learning disabled student because the parent could not attend. Another student's parents could not make the conference until late

November. The second grade teacher and the parents that could attend discussed The Houghton Mifflin Informal Reading Inventory word recognition, fluency, and comprehension results of their child. A homework plan was discussed, explained and written instructions were given for repeated readings on the video tape, Dekodiphukan picture cards and Dolch Sight Word Activities (Appendix B). All materials were given to the parent to facilitate the homework procedure. The second grade teacher/researcher made it clear to the parents that if they had a problem facilitating the homework procedure to notify the teacher/researcher.

The homework procedure worked in some of the homes of the children. When no homework was coming back from the physically impaired student's home, the teacher/researcher called the parents. The parents had tried the homework one night. They thought the homework was interferring with the family's quality time. Therefore, the teacher/researcher gave the homework procedure to the student's aide. The aide did not have any luck with the repeated practice, Dekodiphukan cards or Dolch Sight Word Activities. This student would not attend to the tape. He didn't want to make words with the Dekodiphukan cards. He would know the Dolch Sight Word Activities one day and not the next.

Another parent sent back the materials one week later and said there was no time to practice. A cross-age tutor was assigned to this student at lunch time to work on

repeated readings of the video and Dolch Sight Word Activities.

Since there was no response from one student's parent until late November, a cross-age tutor worked with the student in the late afternoon on repeated readings of the video and the Dolch Sight Word Activities.

The Learning Disabled student's sister reported the student practiced once and wouldn't do it again. Even though this student was out fifty per cent of the day, a cross-age tutor was designated to the student. The student rebelled and wouldn't cooperate with the tutor.

Even though tests were administered in the fall of 1993, the process actually began during the summer of 1993 when the second grade teacher/researcher and her husband video-taped the Houghton Mifflin second grade literature-based reading series, Silly Things Happen. This procedure was done with the approval of Houghton Mifflin Publishers. As long as the tape would be used to supplement the reading program and not be used for resale, the use of their publication was fine. The teacher/researcher recorded the stories, as her husband highlighted the words or phrases of the sentences. Blue transparent overlays were placed over appropriate words and phrases. The taping was done according to the guidelines of Marie Carbo's, How to Read Books for Maximum Reading Gains. One of the guidelines was that the reading material be above the student's reading level. The literature-based series is

above the level of these students. It was hoped that the students would be able to read the text back with smoothness, fluency and understanding to eliminate the frustration of stumbling over unfamiliar words that make reading hard. It was the intent of the teacher/researcher that the students would build self-confidence as readers so that they would want to read more. It was hoped that through listening to the proper phrasing, word pronunciation, and vocabulary, the students would develop their language. It was anticipated that the recorded book method would access the learning style of the visual, auditory, tactile/kinesthetic and global learner. The students would look, listen and point to the words that were recorded. The blue transparent highlighting would provide visual tracking for the students to avoid losing their place in the text. It also provided visual cues to facilitate attending to the print. An added feature which wasn't anticipated is that the tape paused long enough between phrases that the students had the opportunity to repeat after the sentence. This is a strategy that is used in whole language classrooms to facilitate reading of the text.

To facilitate the students listening to the tape in an atmosphere of quiet, boxes with amplifiers were developed by the teacher/researcher's husband to accommodate headsets to the televisions. Two televisions were purchased with attached video recorders. The television sets were connected

at the school for use by the students.

Copies of the video tape were made so each student in the experimental group would have a copy to keep at home. Communication with the parent was necessary so that they would know which story the student was working on in class.

The desire of the teacher/researcher was that when the students did not struggle with the reading of the text, the reading at-risk second graders would be able to comprehend and participate in the post reading activities with the rest of their peers with confidence.

This goal was accomplished. According to teacher observation, all the students were able to respond orally and with comprehension to questions asked. All but three of the experimental group expressed themselves in written language in response to the story read.

It was the teacher/researcher's thought that all children should be able to sit in front of the highlighted text and participate. Research suggested that attention deficit children could sit for hours in front of the television screen.

It was found that two children in the experimental group would not or could not do this. The physically impaired child was included in the regular education second grade. He has language processing problems. He had difficulty looking at the screen, became agitated and would literally rip the head sets from his ears. He would do this in spite of a

teacher's aide at his side. Even with the headsets off, he would not attend to the screen.

Another second grader who had difficulty with this procedure was one who was assigned into the learning disabilities resource program for fifty percent of the day. He was assigned for visual perceptual, auditory receptive, memory and language processing problems. He would not look at the screen, he played with the equipment and he attempted to distract the others that were attending to the text.

After the initial video-taped reading of the text, it was hoped that the experimental group would choose a part of the text to do repeated readings. Because of time constraints of the school day, the students didn't have the opportunity to tell the teacher what part they were going to practice. The teacher/researcher discussed what part they had practiced at another time. It had been hoped that the students would tape their practice session daily for student evaluation and teacher evaluation. Because of the schedule and other management issues in the classroom this aspect of the intervention was not accomplished. The second grade teacher/researcher attempted to listen to the experimental group daily but did not always meet with them daily. Whenever the teacher did meet with the individuals, they could read the material, some more fluently than others.

Additional time at recess was anticipated for use with students having continuing problems with some word

recognition and phrases of the reading. The Language Master was to be used because it accessed all learning styles.

The use of the Language Master was not consistent. Most of the time the students came knowing the passage so the extra practice was not necessary. The two students from the experimental group who really needed it were more interested in the mechanics of it rather than in the learning aspect. It was not as useful a tool as anticipated.

The teacher/researcher attempted to read predictable books with the nonreaders to facilitate additional practice in reading and listening to the language of predictable books. Predictable books develop the expectation of what the print will say. The child learns to look with eyes that expect to find specific words that get learned through meaningful repetition. After a few weeks these nonreaders wanted to read books of their choice during silent reading. So the teacher adapted the procedure, listened and observed the students, alternating individual time with each. The other readers of the experimental group were listened to and observed during their daily practice. The silent reading time is invaluable to these at-risk second graders.

One of the highly distractable nonreaders came in daily for a twenty minute period so that he could read without distractions. This student has been tested and found to have learning disabilities in visual integration, auditory memory and language.

Time was provided, beginning in November through March for the experimental group and their peers to read to bi-lingual first graders. From the beginning of this program, the target group was to read the video tape with the volume off to the first graders. Just before Christmas, the students started asking if they could read a book to the first graders instead of the tape. It had been hoped that the experimental group would practice reading and build confidence in the process. By wanting to read different material to the first graders without the support of the taped video, this goal was accomplished. The other indication of confidence in their reading is the enthusiasm to read in front of the second grade class.

During the summer of 1993, the second grade teacher, her husband and first grade bi-lingual teacher went to a Baretta-Lorton Reading Workshop. The workshop explained the program called Dekodiphukan which executed a hands-on-approach to reading. This program was targeted for kindegarten and first grade students. Being interested in alternative approaches to reading, materials from the workshop kit were adapted since the cost of the total program was unapproachable. The book, Dekodiphukan, was vidotaped by the second grade teacher and her husband to use solely for the purposes of instruction in her classroom and not for resale. Dekodiphukan is a story of the forty-four phonemes. Individualized sets of phonemic picture cards that served as

manipulatives were made. On the back of each card are the common letter or letter pattern that represent the sound. These pictures could be placed together to make words. It was hoped that visual and auditory phonemic awareness and sequencing would be integrated using a kinesthetic approach.

During the month of September, the experimental group's class of students viewed the video tape as a review. The targeted students learned four new sounds a day throughout this process. All enjoyed the story. The students took correlated picture cards and physically built words with the pictures. The Baretta Lorton Reading program was adapted to the Houghton Mifflin second grade spelling and vocabulary book. During spelling time the students listened to the spelling word and found the matching pictures for the sounds. They wrote the predicted spelling. Then the teacher showed the correct spelling and associated the letter patterns on the back of the cards with the sounds. The teacher also gave the applicable phonic rules at that time. This structured hands-on-technique was to be done during a half-hour spelling time once a week. Most of the second graders were beyond this in their spelling and didn't want to do it. The experimental group enjoyed putting the pictures together but not writing the words. This procedure did not go as planned. The procedure took too long and was not of benefit to the majority. After that the wall pictures of Dekodiphukan were used to analyze the sounds of the words. The experimental

group was to practice the spelling list of words with the manipulatives at home as part of their homework procedure for phonemic awareness. The intention of making the students phonemically aware was successful. They were enthusiastic to build words. The experimental group understood this method. The identified learning disabled student felt success with this method. The Learning Disabled Specialist felt that it was confusing to this child to have too many methods and that the teacher should support the Learning Disabilities program. This was disappointing to the second grade teacher since it was hoped that this might be an alternative approach to teach this student to read. This student has now been assigned to a self-contained Learning Disabilities classroom.

Early in October, a volunteer mother photocopied and cut Dekodiphukan paper cards. These were put in an organizer in a center. These paper cards were used to send secret messages to their friends. The interest for this activity began to wane in January, for the majority of the students.

The teacher noticed that when the targeted group writes, the letter sounds are in correct sequence. It appears that the students have developed phonemic awareness. They are heading developmentally to conventional spelling.

Presentation and Analysis of Project Results

In order to assess the effects of the planned intervention, the students' word recognition, oral fluency

and comprehension were tested as stated in the objective. Observations by the Chapter 1 teacher, Learning Disabled Specialist and classroom teacher were also a means of assessment. A parent questionnaire and child questionnaire (Appendix C) were given to assess the reading methods used, and comment on those methods that helped the student become a better reader.

During November through February the proposed interventions were implemented. As a result of inclimate weather in January, the intervention was extended from January 31 through February 18.

The results of the Word Recognition pre and post test of the Experimental Group and Control Group are presented in the following tables.

Table 5A
Isolated Word Recognition
Pre/Postintervention Instructional Levels
Experimental Group

Student	Pre Level	Post Level
1	Kdg	2nd
2	Kdg	2nd
3 *	Pre-Kdg	Pre-Kdg
4	Pre-Kdg	1st
5	Pre-Kdg	1st
6 **	Pre-Kdg	Pre-Kdg
7	1st	2nd

* Physically impaired student - As of January 31 returned to the special education program.
** Assigned self-contained L.D.

Table 5B
Isolated Word Recognition
Pre/Postintervention Instructional Levels
Control Group

Student	Pre Level	Post Level
1	Kdg	1st
2	Kdg	1st
3	1st	1st
4	Kdg	Kdg
5	Kdg	1st
6	Kdg	2nd

In word recognition, four out of seven students in the experimental group made a two level instructional gain. One student made a one level gain and two students made no gains. The two students that show no gain actually did not participate in the interventions.

Of the control group, one student made a two level instructional gain in word recognition, three students advanced one level, and two students did not advance at all.

The conclusion drawn from these data is that the experimental group made greater gains in word recognition than the control group.

The oral fluency test and comprehension test are contingent upon the results of the word recognition test. The students' reading material is chosen at the instructional level of the word recognition score which needs to be ninety percent or above.

According to the Houghton Mifflin Inventory Test Guide, an oral fluency reading accuracy score of ninety percent or above is one indication that a student can handle the material at that level.

The following tables represent the the pre and post tests of the experimental and control groups' Oral Fluency.

Table 6A
Oral Reading Accuracy Test
Fluency Test
Pre/Postintervention
Experimental Group

Student		Pre %	Post %
1		84%	90%
2		95%	98%
3		83%	95%
4	*	65%	76%
5		70%	92%
6	**	29%	0%
7		87%	91%

* newly assigned L.D.
** self-contained L.D. with no interventions

Table 6B
Oral Reading Accuracy
Fluency Test
Pre/Postintervention
Control Group

Student	Pre %	Post %
1	98%	95%
2	100%	96%
3	94%	99%
4	85%	98%
5	98%	90%
6	100%	77%

According to these data all but two students in the experimental group are functioning at their instructional level in fluency.

All but one student in the control group are functioning at their instructional level in fluency.

The conclusion drawn is that all but one from the experimental group advanced in the degree of accuracy in oral reading as compared to two who advanced in the control group. It should be noted that the remainder of the control group's scores decreased in their percentage of accuracy in oral reading fluency.

According to the Houghton Mifflin Informal Reading Test Guide a comprehension score of about sixty-five per cent or seventy-five per cent or above is another indication that a student can handle the material at that level. If the student scores less than sixty-five percent a passage at the next lower level is to be administered.

The following tables reflect the pre and post comprehension scores of the experimental and control groups.

Table 7A
Pre/Postintervention
Comprehension
Experimental Group

Student	Pre Score	Post Score
1	20%	90%
2	20%	30%
3 *	40%	60%
4 **	50%	0%
5	0%	80%
6 ***	0%	0%
7	50%	80%

* Physically impaired - did not do the interventions
** Newly assigned L.D.- scored ninety-six percent at Kdg. level
*** Self-contained L.D. - did not do the interventions

Table 7B
Pre/Postintervention
Comprehension
Control Group

Student	Pre Score	Post Score
1	30%	80%
2	70%	60%
3	80%	100%
4	70%	30%
5	70%	80%
6	50%	60%

Three students from the experimental group comprehended at their instructional level. Four did not.

Three students from the control group comprehended at their instructional level. Three did not.

The conclusions drawn from these data are that the students in the experimental group showed greater gains from pre to post test than the students in the control group.

The objective of this project was to determine if the second grade reading at-risk students would increase oral fluency, increase their level of word recognition and answer comprehension questions with accuracy as measured by the Houghton Mifflin Informal Reading Inventory and teacher observation to a greater degree than the control second grade which uses a traditional approach to reading.

From the testing that was done it can be concluded that in three students this objective has been met.

The data collected from the parent questionnaire was positive. All of the parents felt that the video, with repeated practice, Dekodiphukan, and Dolch Sight Word Activities helped their children become better readers.

The data below shows how many times a week the student practiced the repeated reading with the video.

Student

1. 3 times a week
2. 4 times a week
3. did not participate
4. 5 times a week
5. 1 time a week
6. did not participate
7. 3 times a week

When the experimental group was given the questionnaire they were also positive about their reading achievement. They all said they enjoyed the video tape; all said the video tape helped them recognize words by sounding them out. When questioned about Dekodiphukan, the children thought the pictures helped them remember the sounds to read and spell better. The students thought by writing the words and making flashcards from the Dolch Sight Word Activities, they were able to know the words in the sentences better.

The Chapter 1 reading specialist said the students were making wonderful progress. The L.D. support teacher said she didn't see any progress in student 6. Of course this student was not doing any of the interventions. She did say she thought student 4 had settled down a lot this past year.

The strategies employed to increase the word recognition, fluency and comprehension of the reading at-risk

second graders appear to be successful. The intervention appeared successful in test scores as well as in the perception of the parents, teachers and most important the students.

Reflections and Conclusions

This project accomplished raising the word recognition, fluency and comprehension of the reading at-risk second graders. This was accomplished by using a learning styles approach and repeated readings.

A critical component of the success of using a non-traditional approach to the reading program was the involvement of the student and parents. The students that did not have parent involvement did not appear motivated to try the interventions. One child who did not have parent involvement but did have parent support to have a cross-age tutor was motivated to do the interventions.

If these alternative methods could continue through the next grade and the students make the same gains, the students would be reading at grade level and no longer be in the reading at-risk population.

Chapter 6

DECISIONS ON THE FUTURE

The Solution Strategy

Illiteracy in the United States was brought to the attention of the general public as well as educators in the publication, Becoming a Nation of Readers. Educators must make a conscious effort to accommodate the individual reading styles of the students and not teach just a program that the district has mandated. Educators must not think there is something wrong with children when they have difficulty learning through this designated program.

The data indicate that the philosophy of whole language combined with the learning styles approach should be continued to increase word recognition, fluency and comprehension scores. However, modifications of the original design are suggested.

The production of the video takes many hours to complete. The energy and committment involved is beyond the expectation of most teachers. Not many teachers would have the equipment necessary to accomplish this task, either. If the district thought this part of the intervention was a worthwhile endeavor for them to make so that all of the teachers had these videos, then I can see the video as a viable tool in the classroom. In addition headsets were used

to keep the environment serene for the rest of the students while allowing the experimental group of students to focus on the television. Again the boxes for these headsets were specifically made for the second grade teacher as stated in Chapter 5. Most people would not be able to access this equipment. If the district decided that this was a worthwhile intervention, their technical department could make the boxes for the headsets. The acquisition of television sets for the classroom would be an issue and an expense to the district.

There are alternative solutions to these problems. The first alternative is a resource room set up with television sets and headsets with a volunteer or resource person to attend to the students. This would relieve the district of some of the cost. The other economical alternative is using a tape recorder and headsets as a means of listening to the story. A necessary component would be a volunteer overseeing the tracking and focusing of the students on the words. It appears that these at-risk readers do not attend to the print unless forced to as with the highlighting of the text. As stated before, even with this attention getting device, two students didn't look at the print during the sessions.

After assessing the features of the video and speaking with the Chapter 1 teacher, a feature that would be beneficial is varying speeds of the tape so that the students or teacher could change the speed of the text. It was

obvious as the children became more proficient readers they could read faster than the highlighting and speaker would allow. The waiting became tedious for them. On the positive side, they were feeling self-confident as they were able to go ahead and read the text on their own.

Perhaps with the new technology available, (Power PC) audio-visual capability, the book could be scanned, highlighted and then put out to video. Again, time and equipment is a factor. If the district is cooperative it is a possibility.

If Houghton Mifflin feels it is an added addition to their "literature experience program", after seeing the results of this project, perhaps the video can be produced and sold for the users of the program.

The easiest alternative would be to audio tape the books as a management tool for the students to hear as the other students are reading independently or with a buddy. Of course this would not be a multisensory approach. But it will enable them to feel confident in the understanding of the material and then they can participate in oral class discussions and written responses to the stories. These tapes then can be used for repeated readings as a homelink. So if the video is an impossibility at least, the audio tape should be used.

To get repeated practice (although the material is not the classroom reading material), the computer is available as

a multisensory tool. There is software on the market that has books recorded, the speed can be altered and sound can be turned off. Again the availability of equipment and lack of home connection is a disadvantage. Remember each student had an individual video to practice nightly in this intervention. As mentioned before, with the new technology, the computer programs can be put on video and would become a take-home tool, using the same theory as the one produced for this project. This would take less time and energy on the part of the teacher, but would require the help of the audio-visual department of the district.

The results from the questionnaires that were administered to the students and the parents of the experimental group, were positive towards the interventions. The students thought having the story on video tape was "fun." They all answered that it helped them read better. They replied that hearing it made them remember the sentences and words. Some said seeing it on video helped them remember the words and recognize the words better. From the parents viewpoint, they all said it was something the students enjoyed doing and they felt it helped improve their reading. One parent reported it helped her child understand the story. This child is the newly identified learning disabled student.

Another successful part of the project, according to the responses of the students and parents that participated, was the Dekodiphukan pictured phonics cards to build phonemic

awareness. The students and parents all reported it made the childrer aware of the sounds to read and spell better.

For this project I showed the video first to introduce all of the sounds. An alternative to this part of the intervention would be to read the book Dekodiphukan to the students. Then I introduced the pictures first without the corresponding letters as the program suggests for kindergarten and first grade. I would suggest using the concrete (pictures) with the abstract (letters) for the second graders. If this intervention is tried in the earlier years, I would suggest pictures first just for the sequence and awareness of sounds. This concept coincides with Marie Clay's putting counters in cups for each sound heard for phonemic awareness.

The ideal for Dekodiphukan would be to budget the purchase of the program. The program comes with stamps to use in lieu of the teacher-made cards. Also all of the picture cards and more activities come with the program to use in centers. If this is not possible, I suggest going to the Baretta Lorton Reading workshop to understand the methods and materials of this hands-on program for adaptation as this teacher did.

The other component of the project was the Dolch Sight Word Activities. These should stay in the reading program for the at-risk readers. They are a good sight word memory tool accessing the visual and kinesthetic reading style that

leads to automatic word recognition. They are easily reproducible and are not as time-consuming as the other two parts of the intervention. The students can make flashcards from these words for repeated practice.

Another necessary component of this intervention was the twenty-minute daily silent reading time. This gave the students a chance to choose books of interest and practice their new skills.

A suggestion for better monitoring of the progress of the students is to have consistent volunteers tape the re-readings of the students. It would have been a good self-evaluative tool for the students had this been possible.

Additional Applications

First, in order to facilitate the awareness of the reading style of the students and possibly avoid reading at-risk individuals, the software for this inventory should be made available to all the teachers. This would require the cooperation of the administration.

Secondly these interventions could be used in a variety of support programs. Chapter 1 Reading, Literacy Lab, and additional reading resource programs might benefit from these non-traditional approaches to reading.

A third application of these interventions would be to have these techniques used in a remedial reading program in summer school. The students would be exposed to methods that

may be more productive for them.

A fourth application would be to introduce the highlighted video to a book company and see if there would be an interest in producing the children's literature on video to go out to the public. In this way, the children would correlate oral language to print, pay attention to the print, hear good language spoken, and be able to repeat the practice of reading with each viewing.

Dissemination of Data and Recommendations

The results of this project should be shared with the prinicipal, colleagues, support services, administration and Houghton Mifflin Book Company. As part of the work team for the acceleration of reading comprehension of the students, the staff should be ready to change traditional methods of teaching reading and not just to supplement with remediation of more of the same.

The critical variables in the success of alternative methods of teaching through a learning style approach are the willingness of the teachers to change, motiviation of the students, cooperation of the parents and consistancy of the program.

There is still the question as to why the physically impaired student and the learning disabled student did not respond to the alternative approaches to reading. Each of these students had two characteristics in common. One is

they both have language processing problems and the second is that neither had parent involvement. Perhaps language processing is a larger component as to why the students did not respond to the reading alternatives. Perhaps parental involvement is also a component. Further research might be explored in the areas of language processing and parent involvement and how they are related to reading acquisition and comprehension.

With the state mandate on inclusion, restructuring of education, and the Education goals for the year 2000 eminent, this project has convinced me of the importance of collaboration between staff and administration. It showed the use of technology, and showed the necessity of teachers varying their approaches to meet the needs of individual learning styles of students. Perhaps with the application of total committment to the above, we will no longer be a nation at risk.

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APPENDICES

Appendix A

Teacher Interview Questions

1. Why do you think _____had low comprehension scores?

2. How was the development of_____ oral language?

3. What was the behavior _____ displayed when following along in the text?

4. How did _____show that he/she had an understanding of the sequence of sounds in words?

5. Which learning modalities did _____show the most success?

6. Did _____ choose to read on his/her own?

Appendix B

Parent Letter

Dear Parents,

Based on research, children can best develop a love of reading along with reading proficiency and vocabulary/language development through a literature approach in reading instruction. Our district uses a literature based reading program.

Parent involvement will make a difference in your child's reading success. I will be sending homework home nightly to be returned the next day. The following will be included:

1. Dolch Sight Word Activities
2. Video Tape
3. Phonics Pictures

A homework sheet is enclosed for you to sign and return daily with the the homework.

With the extra practice nightly, fluency in word recognition should lead to comprehension, which is the true goal of reading.

Please feel free to contact me at any time if you have questions or concerns.

Sincerely,

Mrs. Hunt

Appendix B

HOMEWORK INSTRUCTIONS

DOLCH SIGHT WORD ACTIVITIES

1. Complete packet.
2. Practice sight words nightly.

REPEATED READINGS WITH VIDEO TAPE

1. Child chooses sections of text he wants to read fluently.
2. Child watches chosen section of the video tracking with finger.
3. Child rereads video section until he can read it fluently. (AT LEAST THREE TIMES)
4. Child comes back to school the next day and reads section to the teacher.

PHONICS PICTURES AND SPELLING (Dekodiphukan)

1. Use pictures to reinforce phonemic awareness of sounds and letters to form words.
2. Practice spelling daily. It is best to have child write words as dictated for practice.

Appendix B

Homework Checklist

Things to Do Today

Check when done.

Appendix C

Parent Questionnaire

Dear _____,

You have completed working with your child with a take-home read-along video, pictured phonics cards called Dekodiphukan, and Dolch Sight Word Packets.

Please fill out this survey and return it with your child. FOR RESEARCH REASONS PLEASE BE HONEST AND ACCURATE IN YOUR RESPONSES.

1. How many times a week did your child do the repeated readings on videotape?

   1 2 3 4 5 6 7

2. Do you think the highlighted videotaped story helped your child improve his reading?_____

3. Did your child enjoy doing the videotape?_____

   _____

4. Did you use the pictured phonics cards?_____

   Did you see improvement in sounding out words after using these cards? _____

   _____

5. Do you think the Dolch packets of sight words were worthwhile in improving his/her reading?

   _____

   _____

PLEASE RETURN ANY MATERIALS THAT YOU ARE NO LONGER USING WITH YOUR CHILD. THANK YOU.

Appendix C

Child Questionnaire

1. Did you like reading and hearing the story on video tape? Why?

_____

_____

_____

2. Do you think the videotape helped you to read better? Why?

_____

_____

_____

3. Did Dekodiphukan help you read and spell better? How?

_____

_____

_____

4. Do you think the Dolch Sight Word homework helped? Why?

_____

_____

_____